

**WORCESTER POLYTECHNIC INSTITUTE
HEALTH PHYSICS PROCEDURE HP-13
LABORATORY EMERGENCY PROCEDURE**

1. PURPOSE:

To provide instructions to laboratory personnel in the event of a spill of radioactive material.

2. FREQUENCY:

This procedure shall be performed in the event of a spill of radioactive material.

3. MATERIALS, TOOLS, AND EQUIPMENT:

- 3.1. Form(s): None
- 3.2. Absorbent paper
- 3.3. Gloves
- 3.4. Tongs
- 3.5. Plastic bag
- 3.6. G-M tube survey meter

4. PRECAUTIONS:

- 4.1. Ensure that all health physics practices are followed throughout the survey.
- 4.2. Take all necessary precautions to avoid the spread of possible contamination.
- 4.3. Perform an operability check on all instrumentation used. Ensure that the instrumentation has been calibrated within the proper time limit.
- 4.4. Utilize the concepts of time, distance, and shielding to maintain exposure as low as reasonably achievable.

5. INSTRUCTIONS:

- 5.1. Minor Spills:
 - 5.1.1. NOTIFY:

5.1.1.1. Notify persons in the area that a spill has occurred.

5.1.2. PREVENT THE SPREAD:

5.1.2.1. Cover the spill with absorbent paper.

5.1.3. CLEAN UP:

5.1.3.1. Use disposable gloves and remote handling tongs.

5.1.3.2. Carefully fold the absorbent paper and pad.

5.1.3.3. Insert the absorbent paper and pad into a plastic bag.

5.1.3.4. Dispose of the plastic bag in the radioactive waste container.

5.1.3.5. Properly dispose of all other contaminated material (i.e.: gloves).

5.1.4. SURVEY:

5.1.4.1. Use a low-range, thin-window G-M survey meter.

5.1.4.2. Check the area around the spill, hands, and clothing for contamination.

5.1.5. REPORT:

5.1.5.1. **Report the incident to the Radiation Safety Officer.**

5.2. Major Spills:

5.2.1. CLEAR THE AREA:

5.2.1.1. Notify all persons not involved in the spill to vacate the room.

5.2.2. PREVENT THE SPREAD:

5.2.2.1. Cover the spill with absorbent pads.

5.2.2.2. Do not attempt to clean up the spill.

5.2.2.3. Prevent the spread of contamination by confining the movement of all personnel potentially contaminated.

5.2.3. SHIELD THE SOURCE:

5.2.3.1. Shield the spill if it can be done without further contamination or without significantly increasing your radiation exposure.

5.2.4. CLOSE THE ROOM:

5.2.4.1. Leave the room.

5.2.4.2. Lock the door(s) to prevent entry.

5.2.4.3. Post a warning sign on the door.

5.2.5. CALL FOR HELP:

5.2.5.1. **Notify the Radiation Safety Officer Immediately.**

5.2.6. PERSONNEL DECONTAMINATION:

5.2.6.1. Contaminated clothing should be removed and stored for further evaluation by the Radiation Safety Officer.

5.2.6.2. Contaminated skin should be flushed thoroughly and washed with mild soap and lukewarm water.

6. RESTORATION:

None

7. REFERENCES:

7.1. United States Nuclear Regulatory Commission Regulatory Guide 10.8, Appendix H

7.2. Radiation, Health and Safeguards Committee Radiation Regulations

7.3. Code of Federal Regulations Part 10, Chapter 20